Entrez PubMed

Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services

Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources

Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

Items 1 - 4 of 4

1. Phan J, Zdanov A, Evdokimov AG, Tropea JE, Peters HK 3rd, Kapust RB, Li M, Wlodawer A, Waugh DS. Related Articles, Links

   Structural basis for the substrate specificity of tobacco etch virus protease.
   J Biol Chem. 2002 Dec 27;277(52):50564-72. Epub 2002 Oct 10.
   PMID: 12377789 [PubMed - indexed for MEDLINE]

2. Zhdanov AS, Phan J, Evdokimov AG, Tropea JE, Kapust RB, Li M, Wlodawer A, Waugh DS. Related Articles, Links

   [Tobacco etch virus proteinase: crystal structure of the active enzyme and its inactive mutant]
   Bioorg Khim. 2003 Sep-Oct;29(5):457-60. Russian.
   PMID: 14601399 [PubMed - indexed for MEDLINE]

3. Nunn CM, Jeeves M, Cliff MJ, Urquhart GT, George RR, Chao LH, Tscuchia Y, Djordjevic S. Related Articles, Links

   Crystal structure of tobacco etch virus protease shows the protein C terminus bound within the active site.
   J Mol Biol. 2005 Jul 1;350(1):145-55.
   PMID: 15919091 [PubMed - indexed for MEDLINE]

4. van den Berg S, Löfdahl PA, Härd T, Berglund H. Related Articles, Links

   Improved solubility of TEV protease by directed evolution.
   J Biotechnol. 2006 Feb 10;121(3):291-8. Epub 2005 Sep 15.
   PMID: 16150509 [PubMed - indexed for MEDLINE]

Entrez PubMed
Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources
Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

21 Faber KN, Kram AM, Ehrmann M, Veenhuis M. Related Articles, Links

A novel method to determine the topology of peroxisomal membrane proteins in vivo using the tobacco etch virus protease.
J Biol Chem. 2001 Sep 28;276(39):36501-7. Epub 2001 Jul 6.
PMID: 11443138 [PubMed - indexed for MEDLINE]

22 Hu J, Reyes-Cruz G, Goldsmith PK, Spiegel AM. Related Articles, Links

The Venus's-flytrap and cysteine-rich domains of the human Ca2+ receptor are not linked by disulfide bonds.
J Biol Chem. 2001 Mar 9;276(10):6901-4. Epub 2001 Jan 19.
PMID: 11238442 [PubMed - indexed for MEDLINE]

23 Chelius D, Baldwin MA, Lu X, Spencer EM. Related Articles, Links

Expression, purification and characterization of the structure and disulfide linkages of insulin-like growth factor binding protein-4.
J Endocrinol. 2001 Feb;168(2):283-96.
PMID: 11182766 [PubMed - indexed for MEDLINE]

24 Leahy DJ, Dann CE 3rd, Longo P, Perman B, Ramyar KX. Related Articles, Links

A mammalian expression vector for expression and purification of secreted proteins for structural studies.
Protein Expr Purif. 2000 Dec;20(3):500-6.
PMID: 11087690 [PubMed - indexed for MEDLINE]

25 Mestre P, Brigneti G, Baulcombe DC. Related Articles, Links

An Ry-mediated resistance response in potato requires the intact active site of the NIa proteinase from potato virus Y.
Plant J. 2000 Sep;23(5):653-61.
PMID: 10972891 [PubMed - indexed for MEDLINE]

26 Guédin S, Willery E, Tommassen J, Fort E, Drobecq H, Locht C, Jacob-Dubuisson F. Related Articles, Links

Novel topological features of FhaC, the outer membrane transporter involved in the secretion of the Bordetella pertussis filamentous hemagglutinin.
J Biol Chem. 2000 Sep 29;275(39):30202-10.
PMID: 10906141 [PubMed - indexed for MEDLINE]

☐ 27 Purdy MD, Wiener MC. Related Articles, Links

Expression, purification, and initial structural characterization of YadQ, a bacterial homolog of mammalian ClC chloride channel proteins.
FEBS Lett. 2000 Jan 21;466(1):26-8.
PMID: 10648805 [PubMed - indexed for MEDLINE]

☐ 28 Grothe K, Hanke C, Momayezi M, Kissmehl R, Plattner H, Schultz JE. Related Articles, Links

Functional characterization and localization of protein phosphatase type 2C from Paramecium.
J Biol Chem. 1998 Jul 24;273(30):19167-72.
PMID: 9668103 [PubMed - indexed for MEDLINE]

☐ 29 Verchot J, Carrington JC. Related Articles, Links

Debilitation of plant potyvirus infectivity by P1 proteinase-inactivating mutations and restoration by second-site modifications.
J Virol. 1995 Mar;69(3):1582-90.
PMID: 7853492 [PubMed - indexed for MEDLINE]

☐ 30 Parks TD, Dougherty WG. Related Articles, Links

Substrate recognition by the NIa proteinase of two potyviruses involves multiple domains: characterization using genetically engineered hybrid proteinase molecules.
Virology. 1991 May;182(1):17-27.
PMID: 2024462 [PubMed - indexed for MEDLINE]

☐ 31 Riechmann JL, Laín S, García JA. Related Articles, Links

The genome-linked protein and 5' end RNA sequence of plum pox potyvirus.
J Gen Virol. 1989 Oct;70 (Pt 10):2785-9.
PMID: 2794981 [PubMed - indexed for MEDLINE]

☑ 32 Dougherty WG, Parks TD, Cary SM, Bazan JF, Fletterick RJ. Related Articles, Links

Characterization of the catalytic residues of the tobacco etch virus 49-kDa proteinase.
Virology. 1989 Sep;172(1):302-10.
PMID: 2475971 [PubMed - indexed for MEDLINE]

Items 21 - 32 of 32 Previous Page 2 of 2
Display Summary Show 20 Sort By Send to

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	588	((tobacco etch virus) or (tev)) near2 (protease or peptidase or proteinase)	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:35
L2	2	l1 near8 ("70" or "71" or "118" or "119" or "61")	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:38
L3	8	l1 near8 ("60" or "80" or "95" or "120")	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:38

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSPTASXS1656

PASSWORD:
TERMINAL (ENTER 1, 2, 3, OR ?):2

* * * * * * * * * * Welcome to STN International * * * * * * * *
* *

NEWS 1 Web Page for STN Seminar Schedule - N. America
NEWS 2 JUL 02 LMEDLINE coverage updated
NEWS 3 JUL 02 SCISEARCH enhanced with complete author names
NEWS 4 JUL 02 CHEMCATS accession numbers revised
NEWS 5 JUL 02 CA/CAplus enhanced with utility model patents from China
NEWS 6 JUL 16 CAplus enhanced with French and German abstracts
NEWS 7 JUL 18 CA/CAplus patent coverage enhanced
NEWS 8 JUL 26 USPATFULL/USPAT2 enhanced with IPC reclassification
NEWS 9 JUL 30 USGENE now available on STN
NEWS 10 AUG 06 CAS REGISTRY enhanced with new experimental property tags
NEWS 11 AUG 06 FSTA enhanced with new thesaurus edition
NEWS 12 AUG 13 CA/CAplus enhanced with additional kind codes for granted patents
NEWS 13 AUG 20 CA/CAplus enhanced with CAS indexing in pre-1907 records
NEWS 14 AUG 27 Full-text patent databases enhanced with predefined patent family display formats from INPADOCDB
NEWS 15 AUG 27 USPATOLD now available on STN
NEWS 16 AUG 28 CAS REGISTRY enhanced with additional experimental spectral property data
NEWS 17 SEP 07 STN AnaVist, Version 2.0, now available with Derwent World Patents Index
NEWS 18 SEP 13 FORIS renamed to SOFIS
NEWS 19 SEP 13 INPADOCDB enhanced with monthly SDI frequency
NEWS 20 SEP 17 CA/CAplus enhanced with printed CA page images from 1967-1998
NEWS 21 SEP 17 CAplus coverage extended to include traditional medicine patents
NEWS 22 SEP 24 EMBASE, EMBAL, and LEMBASE reloaded with enhancements

```
 NEWS 23  OCT 02  CA/CAplus enhanced with pre-1907 records from
Chemisches
                  Zentralblatt
 NEWS 24  OCT 19  BEILSTEIN updated with new compounds
 NEWS 25  NOV 15  Derwent Indian patent publication number format
enhanced
 NEWS 26  NOV 19  WPIX enhanced with XML display format
 NEWS 27  NOV 30  ICSD reloaded with enhancements
 NEWS 28  DEC 04  LINPADOCDB now available on STN

 NEWS EXPRESS  19 SEPTEMBER 2007:  CURRENT WINDOWS VERSION IS V8.2,
               CURRENT MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),
               AND CURRENT DISCOVER FILE IS DATED 19 SEPTEMBER 2007.

 NEWS HOURS    STN Operating Hours Plus Help Desk Availability
 NEWS LOGIN    Welcome Banner and News Items
 NEWS IPC8     For general information regarding STN implementation
of IPC 8

Enter NEWS followed by the item number or name to see news on that
specific topic.

  All use of STN is subject to the provisions of the STN Customer
  agreement.  Please note that this agreement limits use to scientific
  research.  Use for software development or design or implementation
  of commercial gateways or other similar uses is prohibited and may
  result in loss of user privileges and other penalties.

* * * * * * * * * * * * * * * STN  Columbus  * * * * * * * * * * * * * *
* *

FILE 'HOME' ENTERED AT 18:44:32 ON 10 DEC 2007

=> File Medline EMBASE Biosis Caplus
COST IN U.S. DOLLARS                                  SINCE FILE      TOTAL
                                                         ENTRY    SESSION
FULL ESTIMATED COST                                       0.21       0.21

FILE 'MEDLINE' ENTERED AT 18:44:46 ON 10 DEC 2007

FILE 'EMBASE' ENTERED AT 18:44:46 ON 10 DEC 2007
Copyright (c) 2007 Elsevier B.V. All rights reserved.

FILE 'BIOSIS' ENTERED AT 18:44:46 ON 10 DEC 2007
Copyright (c) 2007 The Thomson Corporation

FILE 'CAPLUS' ENTERED AT 18:44:46 ON 10 DEC 2007
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)
```

```
=> s ((tobacco etch virus) or (tev)) (2A) (protease or peptidase or
proteinase)
L1          594 ((TOBACCO ETCH VIRUS) OR (TEV)) (2A) (PROTEASE OR
PEPTIDASE OR
                PROTEINASE)

=> s l1 (8A) (70 or 71 or 118 or 119 or 61 or 60 or 80 or 95 or 120)
L2            0 L1 (8A) (70 OR 71 OR 118 OR 119 OR 61 OR 60 OR 80 OR
95 OR 120
```

Items 1 - 5 of 5

1. Tözsér J, Tropea JE, Cherry S, Bagossi P, Copeland TD, Wlodawer A, Waugh DS. Related Articles, Links

Comparison of the substrate specificity of two potyvirus proteases.
FEBS J. 2005 Jan;272(2):514-23.
PMID: 15654889 [PubMed - indexed for MEDLINE]

2. Nardella C, Lahm A, Pallaoro M, Brunetti M, Vannini A, Steinkühler C. Related Articles, Links

Mechanism of activation of human heparanase investigated by protein engineering.
Biochemistry. 2004 Feb 24;43(7):1862-73.
PMID: 14967027 [PubMed - indexed for MEDLINE]

3. Gouffi K, Gérard F, Santini CL, Wu LF. Related Articles, Links

Dual topology of the Escherichia coli TatA protein.
J Biol Chem. 2004 Mar 19;279(12):11608-15. Epub 2003 Dec 29.
PMID: 14701831 [PubMed - indexed for MEDLINE]

4. Kristelly R, Earnest BT, Krishnamoorthy L, Tesmer JJ. Related Articles, Links

Preliminary structure analysis of the DH/PH domains of leukemia-associated RhoGEF.
Acta Crystallogr D Biol Crystallogr. 2003 Oct;59(Pt 10):1859-62. Epub 2003 Sep 19.
PMID: 14501138 [PubMed - indexed for MEDLINE]

5. Phan J, Zdanov A, Evdokimov AG, Tropea JE, Peters HK 3rd, Kapust RB, Li M, Wlodawer A, Waugh DS. Related Articles, Links

Structural basis for the substrate specificity of tobacco etch virus protease.
J Biol Chem. 2002 Dec 27;277(52):50564-72. Epub 2002 Oct 10.
PMID: 12377789 [PubMed - indexed for MEDLINE]

Entrez PubMed
Overview
Help | FAQ
Tutorials
New/Noteworthy
E-Utilities

PubMed Services
Journals Database
MeSH Database
Single Citation Matcher
Batch Citation Matcher
Clinical Queries
Special Queries
LinkOut
My NCBI

Related Resources
Order Documents
NLM Mobile
NLM Catalog
NLM Gateway
TOXNET
Consumer Health
Clinical Alerts
ClinicalTrials.gov
PubMed Central

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	588	((tobacco etch virus) or (tev)) near2 (protease or peptidase or proteinase)	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:35
L2	2	l1 near8 ("70" or "71" or "118" or "119" or "61")	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:38
L3	8	l1 near8 ("60" or "80" or "95" or "120")	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:50
L4	0	L1 near4 homology	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:51
L5	0	L1 near8 homology	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:51
L6	5	L1 near8 structure	US-PGPUB; USPAT	ADJ	OFF	2007/12/10 18:53

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSPTASXS1656

PASSWORD:
* * * * * * RECONNECTED TO STN INTERNATIONAL * * * * * *
SESSION RESUMED IN FILE 'MEDLINE, EMBASE, BIOSIS, CAPLUS'
AT 18:56:52 ON 10 DEC 2007
FILE 'MEDLINE' ENTERED AT 18:56:52 ON 10 DEC 2007
FILE 'EMBASE' ENTERED AT 18:56:52 ON 10 DEC 2007
Copyright (c) 2007 Elsevier B.V. All rights reserved.
FILE 'BIOSIS' ENTERED AT 18:56:52 ON 10 DEC 2007
Copyright (c) 2007 The Thomson Corporation
FILE 'CAPLUS' ENTERED AT 18:56:52 ON 10 DEC 2007
COPYRIGHT (C) 2007 AMERICAN CHEMICAL SOCIETY (ACS)

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	35.42	35.63

=> s ((tobacco etch virus) or (tev)) (2A) (protease or peptidase or proteinase)
L3 594 ((TOBACCO ETCH VIRUS) OR (TEV)) (2A) (PROTEASE OR PEPTIDASE OR
PROTEINASE)

=> s l3 (8A) (homology or identity or similarity or homologous)
L4 5 L3 (8A) (HOMOLOGY OR IDENTITY OR SIMILARITY OR HOMOLOGOUS)

=> S1 (homology or identity or similarity or homologous) (4A) function
S1 IS NOT A RECOGNIZED COMMAND
The previous command name entered was not recognized by the system.
For a list of commands available to you in the current file, enter
"HELP COMMANDS" at an arrow prompt (=>).

=> S l3 (homology or identity or similarity or homologous) (4A) function
MISSING OPERATOR 'L15 (HOMOLOGY'
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> S (homology or identity or similarity or homologous) (4A) function
L5 6379 (HOMOLOGY OR IDENTITY OR SIMILARITY OR HOMOLOGOUS)
(4A) FUNCTION

```
=> S (homology or identity or similarity or homologous) (4A structure
MISSING OPERATOR MOLOGOUS) (4A
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> S (homology or identity or similarity or homologous) (4A) structure
L6       17030 (HOMOLOGY OR IDENTITY OR SIMILARITY OR HOMOLOGOUS)
(4A) STRUCTUR
                E

=> s l4 and l5 and l6
L7            0 L4 AND L5 AND L6

=> duplicate
ENTER REMOVE, IDENTIFY, ONLY, OR (?):remove
ENTER L# LIST OR (END):l4
DUPLICATE PREFERENCE IS 'MEDLINE, EMBASE, BIOSIS'
KEEP DUPLICATES FROM MORE THAN ONE FILE?  Y/(N):n
PROCESSING COMPLETED FOR L4
L8             2 DUPLICATE REMOVE L4 (3 DUPLICATES REMOVED)

=> d l8 1-2 bib ab

L8   ANSWER 1 OF 2     MEDLINE on STN                    DUPLICATE 1
AN   2005028473     MEDLINE
DN   PubMed ID: 15654889
TI   Comparison of the substrate specificity of two potyvirus
proteases.
AU   Tozser Jozsef; Tropea Joseph E; Cherry Scott; Bagossi Peter;
Copeland
     Terry D; Wlodawer Alexander; Waugh David S
CS   Department of Biochemistry and Molecular Biology, Research
Center for
     Molecular Medicine, University of Debrecen, Debrecen, Hungary..
     tozser@indi.biochem.dote.hu
SO   The FEBS journal, (2005 Jan) Vol. 272, No. 2, pp. 514-23.
     Journal code: 101229646. ISSN: 1742-464X.
CY   England: United Kingdom
DT   (COMPARATIVE STUDY)
     Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Priority Journals
EM   200503
ED   Entered STN: 19 Jan 2005
     Last Updated on STN: 2 Mar 2005
     Entered Medline: 1 Mar 2005
AB   The substrate specificity of the nuclear inclusion protein a
(NIa)
     proteolytic enzymes from two potyviruses, the tobacco etch virus
(TEV) and
     tobacco vein mottling virus (TVMV), was compared using
oligopeptide
```

substrates. Mutations were introduced into TEV protease in an effort to identify key determinants of substrate specificity. The specificity of the mutant enzymes was assessed by using peptides with complementary substitutions. The crystal structure of TEV protease and a homology model of TVMV protease were used to interpret the kinetic data. A comparison of the two structures and the experimental data suggested that the differences in the specificity of the two enzymes may be mainly due to the variation in their S4 and S3 binding subsites. Two key residues predicted to be important for these differences were replaced in TEV protease with the corresponding residues of TVMV protease. Kinetic analyses of the mutants confirmed that these residues play a role in the specificity of the two enzymes. Additional residues in the substrate-binding subsites of TEV protease were also mutated in an effort to alter the specificity of the enzyme.

L8 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 2
AN 89370313 MEDLINE
DN PubMed ID: 2475971
TI Characterization of the catalytic residues of the tobacco etch virus 49-kDa proteinase.
AU Dougherty W G; Parks T D; Cary S M; Bazan J F; Fletterick R J
CS Department of Microbiology, Oregon State University, Corvallis 97331-3804.
NC DK39304 (NIDDK)
SO Virology, (1989 Sep) Vol. 172, No. 1, pp. 302-10.
Journal code: 0110674. ISSN: 0042-6822.
CY United States
DT (COMPARATIVE STUDY)
Journal; Article; (JOURNAL ARTICLE)
(RESEARCH SUPPORT, NON-U.S. GOV'T)
(RESEARCH SUPPORT, U.S. GOV'T, P.H.S.)
LA English
FS Priority Journals
EM 198909
ED Entered STN: 9 Mar 1990
Last Updated on STN: 3 Feb 1997
Entered Medline: 29 Sep 1989
AB The 49-kDa proteinase of tobacco etch virus (TEV) cleaves the polyprotein

derived from the TEV genomic RNA at five locations. Molecular genetic and biochemical analyses of the 49-kDa TEV proteinase were performed to test its homology to the cellular trypsin-like serine proteases. A cDNA fragment, containing the TEV 49-kDa proteinase gene and flanking sequences, was expressed in a cell-free transcription/translation system and resulted in the formation of a polyprotein precursor that underwent rapid self-processing. Site-directed mutagenesis was used to test the effect of altering individual 49-kDa amino acid residues on proteolysis. The data suggest that the catalytic triad of the TEV 49-kDa proteinase could be composed of the His234, Asp269, and Cys339. These findings are consistent with the hypothesis that the TEV 49-kDa proteinase is structurally similar to the trypsin-like family of serine proteinases with the substitution of Cys339 as the active site nucleophile. A structural model of the TEV 49-kDa proteinase proposes other virus-specific differences in the vicinity of the active site triad and substrate-binding pocket. The structure may explain the observed negligible effect of most cellular proteinase inhibitors on the activity of this viral proteinase.

1: Virology. 1989 Sep;172(1):302-10.

Characterization of the catalytic residues of the tobacco etch virus 49-kDa proteinase.

Dougherty WG, **Parks TD**, **Cary SM**, **Bazan JF**, **Fletterick RJ**.

Department of Microbiology, Oregon State University, Corvallis 97331-3804.

The 49-kDa proteinase of tobacco etch virus (TEV) cleaves the polyprotein derived from the TEV genomic RNA at five locations. Molecular genetic and biochemical analyses of the 49-kDa TEV proteinase were performed to test its homology to the cellular trypsin-like serine proteases. A cDNA fragment, containing the TEV 49-kDa proteinase gene and flanking sequences, was expressed in a cell-free transcription/translation system and resulted in the formation of a polyprotein precursor that underwent rapid self-processing. Site-directed mutagenesis was used to test the effect of altering individual 49-kDa amino acid residues on proteolysis. The data suggest that the catalytic triad of the TEV 49-kDa proteinase could be composed of the His234, Asp269, and Cys339. These findings are consistent with the hypothesis that the TEV 49-kDa proteinase is structurally similar to the trypsin-like family of serine proteinases with the substitution of Cys339 as the active site nucleophile. A structural model of the TEV 49-kDa proteinase proposes other virus-specific differences in the vicinity of the active site triad and substrate-binding pocket. The structure may explain the observed negligible effect of most cellular proteinase inhibitors on the activity of this viral proteinase.

PMID: 2475971 [PubMed - indexed for MEDLINE]